

NOTES ON THE AUSTRALIAN SPECIES OF *MOLOPHILUS*
[TIPULIDAE, DIPTERA]. II.

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(Communicated by I. M. Mackerras, M.B., Ch.M.)

(Text-figures 1-12.)

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The preceding paper under this general title appeared in this journal in 1929 (PROC. LINN. Soc. N.S.W., 54, 137-144). It considered eleven species of this vast genus that were described by Skuse in 1889. The present report considers twelve further members of the group, the majority being taken by my good friend and co-worker on the Tipulidae, Mr. F. Erasmus Wilson, in New South Wales, Victoria and Tasmania, the types being preserved in the Wilson Collection. A smaller number from the Dorrigo of northern New South Wales were taken by Mr. William Heron, who has collected numerous Tipulidae in this very interesting region. These specimens are retained in my own collection.

MOLOPHILUS FUSIFORMIS, n. sp.

Belongs to the *plagiatus* group; allied to *longicornis*; general coloration dark plumbeous grey; antennae of ♂ elongate, the segments fusiform; wings greyish, the veins conspicuous, narrowly seamed with dusky; terminalia of ♂ with the apical beak of basistyle blackened but irregular in outline; basal dististyle a black, nearly straight rod, relatively stout, the outer third gradually narrowed to a spinous point; phallosomic structure a pale, oval, setuliferous cushion.

♂. Length about 3.5 mm.; wing 4 mm.; antenna about 4 mm.

Rostrum and palpi dark brown. Antennae of ♂ black throughout, somewhat longer than the entire body; flagellar segments fusiform, the apical narrowed portion longer and more slender than the basal. Head dark brownish-grey.

Mesonotum dark plumbeous grey, without stripes. Pleura dark grey. Halteres pale, the knobs weakly darkened. Legs with the coxae yellowish testaceous; trochanters yellow; remainder of legs broken. Wings greyish, the veins conspicuous, pale brown, narrowly seamed with dusky. Venation: R_2 lying a short distance beyond level of r-m; m-cu about one-third the petiole of cell M_3 ; vein 2nd A relatively short, ending some distance before m-cu.

Abdomen black throughout. Male hypopygium (Text-fig. 1) with the apical beak of basistyle (*vb*) blackened and irregular in outline, not forming a smooth structure as usual in the group. Outer dististyle (*od*) with the outer arm truncated and microscopically toothed at apex. Basal dististyle (*bd*) a black, nearly straight to slightly arcuate rod of moderate stoutness, on distal third gradually narrowed into a spinous point; surface of style with a few microscopic punctures. Phallosomic structure (*p*) a pale oval cushion, clothed with delicate setulae.

Hab.—New South Wales.

Holotype, ♂, Dorrigo, Eastern Dorrigo, altitude about 2,000 feet, 12th February, 1933 (W. Heron).

Molophilus fusiformis is amply distinct from *M. longicornis* Skuse, in the general dark grey coloration and details of structure of the male terminalia, especially the apical beak of basistyle and the conformation of the basal dististyle. The flagellar segments are more fusiform than in several other allied members of the *plagiatus* group.

MOLOPHILUS PARVISERRATUS, n. sp.

Belongs to the *plagiatus* group; allied to *perdistinctus*; general coloration of thorax pale brownish-yellow; antennae of ♂ nearly as long as body, the flagellar segments fusiform; ♂ terminalia with the phallosome appearing as a conspicuous blackened lyriform plate, the inner margins of the arms microscopically serrate.

♂. Length about 4-4.5 mm.; wing 4.8-5.5 mm.; antenna about 4-4.2 mm.

Rostrum yellowish-brown; palpi brown. Antennae of ♂ elongate, nearly as long as the body; scape and pedicel yellowish-brown; flagellum brownish-black; flagellar segments elongate-fusiform, with long outspreading verticils on the swellings. Head brownish-grey.

Thorax almost uniformly pale brownish-yellow, the dorsum a trifle darker. Halteres dusky, the base of stem pale yellow. Legs with the coxae and trochanters yellowish testaceous; remainder of legs yellow, the colour more or less obscured by dark setae; outer tarsal segments more uniformly darkened; fore tibiae of ♂ not darkened subbasally. Wings greyish; veins pale brown; macrotrichia darker brown. Venation: R_2 lying slightly distad of level of r-m; petiole of cell M_3 relatively long, exceeding three times m-cu; vein 2nd A long, ending shortly beyond m-cu.

Abdomen dark brown, the terminalia brownish-yellow. ♂ terminalia (Text-fig. 2) with the beak of ventral lobe (*vb*) of basistyle slender but heavily blackened. Outer dististyle (*od*) bifid, the outer arm larger and more flattened. Basal dististyle (*bd*) shorter than outer, slender, a little sinuous at outer end and here provided with small tubercles. Phallosome (*p*) conspicuous, appearing as a blackened lyriform plate, the arms narrowed into slender, acute, gently incurved spines, the inner margins of these arms with small acute teeth.

Hab.—Tasmania.

Holotype, ♂, National Park, 11th-15th January, 1933 (F. E. Wilson). *Paratopotype*, ♂; *paratypes*, ♂, Mount Wellington, 10th January, 1933 (F. E. Wilson).

Molophilus parviserratus is most nearly allied to *M. perdistinctus* Alexander and *M. distinctissimus* Alexander, being readily told from all other described species of the genus by the structure of the phallosome of the male hypopygium. This more resembles in conformation the corresponding organ in *M. lyratus* Alexander and allies, which, however, fall in a different group (*gracilis*, *ruficollis* subgroup) of the genus. In the present collection, the species was associated in nature with a group of other Molophilini, several of which likewise had elongate antennae in the male sex (including *M. duplex* Alexander, *M. parvistylus* Alexander, *M. perdistinctus* Alexander, *M. variistylus* Alexander, and others).

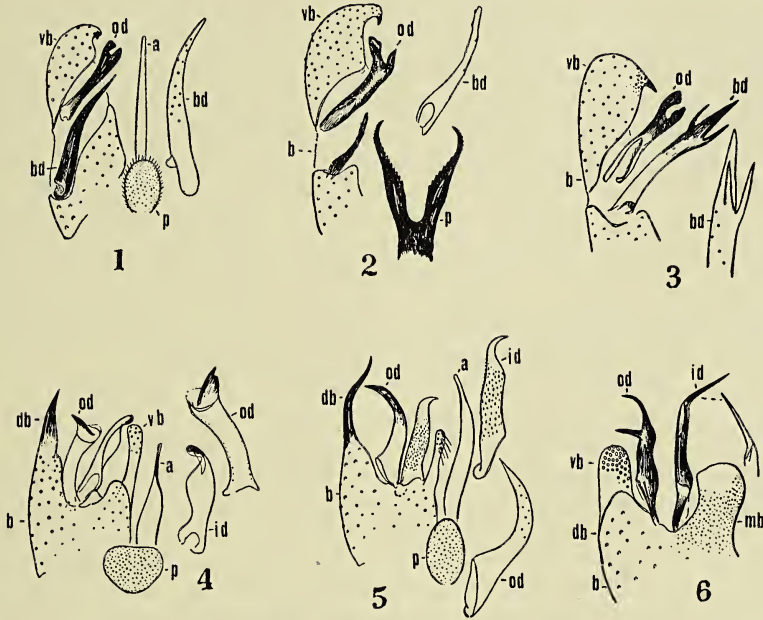
MOLOPHILUS TERNATUS, n. sp.

Belongs to the *plagiatus* group; allied to *bucerus*; general coloration of entire body pale yellow; male terminalia with the axis of basal dististyle terminating in a stout acute spine that is subtended by two more slender spines.

♂. Length about 3.2-3.4 mm.; wing 4-4.2 mm. ♀. Length about 4 mm.; wing 4.5 mm.

Body, including head, thorax, abdomen, legs, and wings, entirely light yellow; palpi dark brown; outer segments of antennae weakly darkened; eyes black.

Antennae of ♂ of moderate length, if bent backward extending about to base of halteres; verticils long and conspicuous. Darkened ring on fore tibia of ♂ pale and relatively inconspicuous. Wings with the veins pale yellow. Venation: R_2 lying just distad of level of r-m; vein 2nd A ending shortly beyond origin of



Text-figs. 1-6.—Male terminalia.

1, *Molophilus fusiformis*, n. sp.; 2, *M. parviserratus*, n. sp.; 3, *M. ternatus*, n. sp.; 4, *M. megacanthus*, n. sp.; 5, *M. drepanostylus*, n. sp.; 6, *M. tetracanthus*, n. sp. (Symbols: a, aedeagus; b, basistyle; bd, basal dististyle; db, dorsal lobe of basistyle; id, inner dististyle; mb, mesal lobe of basistyle; od, outer dististyle; p, phallosome; vb, ventral lobe of basistyle.)

petiole of cell M_3 . Male hypopygium (Text-fig. 3) with the beak of the ventral lobe (vb) of basistyle relatively slender. Basal dististyle (bd) stouter than in *bucerus*, the axis terminating in a stout spine that is subtended by two more slender spines.

Hab.—Victoria.

Holotype, ♂, Beech Forest, Turton's Pass, Otway Peninsula, 11th-19th January, 1932 (F. E. Wilson). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 4 ♂, ♀.

The trispinous apex of the basal dististyle of the male terminalia readily separates this fly from the allied *Molophilus bucerus* Alexander (Victoria).

MOLOPHILUS MEGACANTHUS, n. sp.

Belongs to the *gracilis* group and subgroup; general coloration dark grey, including the scutellum, the latter sometimes a trifle brightened; knobs of halteres

dark or only vaguely brightened; wings with a blackish suffusion; male terminalia with the dorsal lobe of basistyle an unusually short and stout black spine; ventral lobe a slender club; outer dististyle a nearly straight rod, at apex produced laterad into an acute black spine.

♂. Length about 3.5-3.8 mm.; wing 4.2-4.6 mm. ♀. Length about 5 mm.; wing 4.8-5 mm.

Rostrum greyish-black; palpi black. Antennae black throughout, in ♂ of moderate length, if bent backward extending nearly to the root of wings; flagellar segments long-oval, with long outspreading setae and verticils on the basal five or six segments that slightly exceed the segments in length. Head dark grey.

Anterior lateral pretergites restrictedly light yellow. Mesonotal praescutum dark brown, grey on sides; posterior sclerites of mesonotum, including the scutellum, dark grey; in cases, the scutellum slightly brightened. Pleura dark plumbeous grey. Halteres dark brown, the extreme base of stem yellow; in cases, the knobs vaguely brightened. Legs with the coxae dark grey; trochanters testaceous brown; remainder of legs brownish-black; the usual subbasal ring on fore tibia of ♂ is lacking or scarcely evident. Wings relatively narrow, with a blackish suffusion; stigma and vague clouds along cord and some of the longitudinal veins darker; macrotrichia dark; veins dark brown. Venation: R_2 in alignment with $r-m$; petiole of cell M_3 variable, in cases unusually long, exceeding vein M_4 and fully five times as long as $m-cu$; in other cases only about three times $m-cu$; vein 2nd A ending shortly beyond $m-cu$.

Abdomen, including terminalia, brownish-black. Male terminalia (Text-fig. 4) with the basistyle (*b*) short and stout; dorsal lobe (*db*) unusually stout, terminating in a broad flattened black spine; mesal lobe extended into a small, finger-like setiferous lobule; ventral lobe (*vb*) slender, as in *tenuiclavus* and allied forms. Outer dististyle (*od*) a straight to gently curved rod, at apex produced laterad into a long blackened spine; apex of style at insertion of the terminal spine in cases with white membranous tissue; in type, lacking this white membrane and produced into a few microscopic spinulae. Inner dististyle (*id*) subequal in length, appearing as a flattened scoop-like blade. Aedeagus (*a*) relatively short, the apex slender, the basal portion subtended by wide flanges.

Hab.—New South Wales.

Holotype, ♂, Wentworth Falls, Blue Mts., altitude 2,840 feet, 20th-30th October, 1930 (F. E. Wilson). *Allotopotype*, ♀. *Paratopotypes*, 1 ♂, 1 ♀; *paratypes*, 1 ♂, 1 ♀, Blackheath, Blue Mts., altitude 3,495 feet, 20th-30th October, 1930 (F. E. Wilson).

Molophilus megacanthus is well distinguished from all other members of the *gracilis* subgroup by the details of the male terminalia, including the unusually broad spine of the dorsal lobe of basistyle and other details of the organ.

MOLOPHILUS DREPANOSTYLUS, n. sp.

Belongs to the *gracilis* group and subgroup; allied to *setulistylus*; general coloration dark brownish-grey, the scutellum obscure yellow; male terminalia with the ventral lobe of basistyle small; outer dististyle a strongly curved sickle-shaped rod; inner dististyle with abundant microscopic setulae.

♂. Length about 4-4.2 mm.; wing 5-5.2 mm.

Rostrum and palpi black. Antennae of moderate length, if bent backward extending about to wing-root, brown throughout. Head chiefly greyish-brown, the front and orbits narrowly yellowish.

Pronotum and mesonotum dark brownish-grey, variegated by the yellow anterior lateral pretergites and the obscure yellow scutellum. Pleura dark greyish-brown. Halteres light yellow. Legs with the fore coxae dark brown, the remaining coxae somewhat paler; trochanters yellow; remainder of legs chiefly dark brown, the femoral bases obscure yellow; tibial enlargement of ♂ present. Wings with a faint brownish tinge, the veins a little darker; trichia dark brown. Venation: R_2 lying some distance beyond level of r-m, R_{2+3} being from two to nearly three times R_{4+5} ; petiole of cell M_3 varying from one-half longer to nearly twice m-cu; vein 2nd A ending about opposite midlength m-cu.

Abdomen, including terminalia, dark brown. Male terminalia (Text-fig. 5) with the dorsal spine (*db*) of basistyle long and slender, gently curved; ventral lobe of basistyle slender but much smaller than in *aequistylus*, *setulistylus* or *tenuiclavus*. Outer dististyle (*od*) a strongly curved rod that is roughly sickle-shaped, the tip acute, the surface with a few scattered punctures. Inner dististyle (*id*) of nearly the same length, relatively slender, the surface, except at base and apex, with microscopic setulae.

Hab.—New South Wales.

Holotype, ♂, Dorrigo, East Dorrigo, altitude about 2,000 feet, 12th April, 1931 (W. Heron). *Paratopotype*, ♂, 20th April, 1931.

The nearest ally of the present species is *Molophilus setulistylus* Alexander, which has the ventral lobe of basistyle much larger, being longer than the dorsal spine; the shapes of the dististyles are similarly distinct.

MOLOPHILUS TETRACANTHUS, n. sp.

Belongs to the *gracilis* group and subgroup; size small (wing about 3.5 mm.); mesonotum chiefly yellowish, the pleura and mediotergite more plumbeous; legs chiefly pale; fore tibiae (♂) without differentiated basal ring; male terminalia without spines on any lobes of basistyle; both dististyles bifid, the outer with very long branches.

♂. Length about 2.5–2.6 mm.; wing 3.4–3.5 mm.

Rostrum brown; palpi black. Antennae of ♂ short, testaceous brown; flagellar verticils long. Head brownish-grey.

Mesonotum almost uniform reddish-yellow, the postnotal mediotergite more plumbeous. Pleura plumbeous to somewhat more testaceous. Halteres with the stem testaceous, the knobs light yellow. Legs with the coxae and trochanters yellowish-testaceous; remainder of legs chiefly pale, the outer tarsal segments more darkened; trichia of legs dark; no modified annulus on fore tibia (♂). Wings faintly greyish subhyaline, the prearcular and costal portions somewhat more luteous; veins pale, macrotrichia slightly darker. Venation: R_2 opposite or just beyond level of r-m; petiole of cell M_3 from two to two and one-half times m-cu; vein 2nd A ending about opposite one-fourth the length of the petiole of cell M_3 .

Abdomen dark brown, the terminalia obscure yellow. Male terminalia (Text-fig. 6) with the dorsal lobe (*db*) of basistyle weakly developed and obtuse at apex; ventral lobe (*vb*) of moderate size, with the usual retrorse setae of the group; mesal lobe (*mb*) very extensive, with delicate setulae. Both dististyles heavily blackened, the outer style (*od*) with two very long spines, the axial spine gently curved, the lateral spine straight and somewhat more powerful, leaving the axis at about a right angle at near two-thirds the length of the style; inner dististyle (*id*) long and slender, narrowed to a long apical spine, at near two-thirds the

length bearing a small acute lateral spine; surface of inner style with about fifteen microscopic punctures.

Hab.—Victoria.

Holotype, ♂, Mount Donna Buang, above Warburton, altitude 3,000–4,000 feet, April, 1931 (F. E. Wilson). *Paratopotype*, ♂. *Paratype*, 1 ♂, Mount Dandenong, 24th January, 1931 (F. E. Wilson).

Molophilus tetracanthus has no close described relatives in the Australian fauna. It approaches species such as *M. aphantia* Alexander and *M. forceps* Alexander, yet is very different in the details of structure of the male terminalia.

MOLOPHILUS DORRIGANUS, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; most nearly allied to *variistylus* and *macleayanus*; antennae of ♂ a little longer than the body, strongly nodulose; knobs of halteres darkened; male terminalia with the basal dististyle a strongly curved blackened hook from a dilated base, without a basal tail-like extension, as is the case in *variistylus*.

♂. Length about 3.2 mm.; wing 4 mm.; antenna about 3.5 mm.

Rostrum and palpi light brown. Antennae of ♂ elongate, slightly exceeding the body in length, black throughout; flagellar segments strongly nodulose, rounded-fusiform, the apical necks slender. Head brown.

Thorax light brown, the dorsopleural region somewhat darker. Halteres pale, the knobs dark brown. Legs with the coxae and trochanters testaceous; remainder of legs broken. Wings greyish-subhyaline; veins pale; macrotrichia long, brown. Venation: R_2 in alignment with r-m; petiole of cell M_3 exceeding twice m-cu; vein 2nd A relatively short, ending some distance before m-cu.

Abdomen, including terminalia, dark brown. Male terminalia (Text-fig. 7) with the ventral lobe (*vb*) of basistyle obtuse at apex. Outer dististyle (*od*) slender, sinuous, near apex splitting into two short blackened arms. Basal dististyle (*bd*) with a flattened base that narrows into a long slender curved black spine, with a few setae at point of curvature; no pale tail-like extension at base, as is the case in *variistylus*. Phallosome (*p*) broadly ovate, the apex narrowed, the surface glabrous.

Hab.—New South Wales.

Holotype, ♂, Dorrigo, East Dorrigo, altitude 2,300 feet, 20th March, 1931 (W. Heron).

Molophilus dorriganus is most closely allied to *M. macleayanus* Alexander (New South Wales, Victoria) and *M. variistylus* Alexander (Tasmania), agreeing in the elongate nodulose antennae of the male, differing in the structure of the male terminalia.

MOLOPHILUS PICTOR, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; most nearly allied to *permutatus*; mesothorax chiefly obscure orange, contrasting with the dark grey head and black abdomen; antennae short in both sexes; knobs of halteres light yellow; legs black; wings with a strong blackish tinge, the prearcular region abruptly yellow; male terminalia with the basal dististyle appearing as a slender, gently curved spine, the outer face a little roughened.

♂. Length about 4.3–4.5 mm.; wing 5.2–5.5 mm. ♀. Length about 5.5 mm.; wing 6–6.2 mm.

Rostrum light brown; palpi black. Antennae short in both sexes, black throughout; flagellar segments sub-oval, the ends of the more basal ones trun-

cated; verticils exceeding the segments. Head dark grey, the anterior vertex more buffy-grey.

Pronotum obscure orange, slightly infuscated on sides; anterior lateral pretergites light yellow. Mesonotum dull orange. Pleura obscure orange, very sparsely variegated with brown on the sternopleurite and meral region, the anepisternum and propleura more extensively darkened; dorsopleural region dusky. Halteres with base of stem yellow, the remainder of stem dusky, the knobs light yellow. Legs with the coxae brownish-yellow, the fore coxae darker; trochanters yellow; remainder of legs black. Wings with a strong blackish tinge, the prearcular region abruptly yellow; veins conspicuous, brownish-black, brighter at wing-base. Venation: R_{2+3+4} nearly twice the basal section of R_5 ; petiole of cell M_3 about one-third longer than m-cu; vein 2nd A relatively long, ending about opposite, or in cases, to opposite one-third the length of the petiole of cell M_3 .

Abdomen black, terminalia dark brown. Genital segment of female obscure orange; valves of ovipositor very long and slender, gently upcurved. Male terminalia (Text-fig. 8) of the general structure of *immutatus* and *permutatus*; mesal lobe (*mb*) of basistyle not produced into a spine, as is the case in *immutatus*. Outer dististyle (*od*) long and slender, the apex a slender curved hook. Basal dististyle (*bd*) more slender than in *permutatus*, appearing as a gently curved black spine, the outer surface microscopically roughened. Phallosomic structure (*p*), with the lateral spines simple, the crown broad, with numerous setae.

Hab.—Victoria.

Holotype, ♂, Warburton, on and near rock faces at river level, altitude 500 feet, April, 1931 (F. E. Wilson). *Allotopotype*, ♀. *Paratopotypes*, 1 ♂, 2 ♀.

The only closely allied species are *Molophilus immutatus* Alexander and *M. permutatus* Alexander, both likewise from Victoria. The former species differs notably in the coloration and in the structure of the male terminalia, especially the long conspicuous spine on the mesal lobe of the basistyle and the lateral spine on the basal dististyle. *M. permutatus* is much smaller, almost entirely black, including the thorax, and with the details of the terminalia distinct, especially the stouter basal dististyle and the weakly bidentate lateral spines of the phallosome.

MOLOPHILUS NEOLYRATUS, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; allied to *lyratus*; general coloration of mesonotum light reddish-brown, the pleura darker brown; legs brownish-black; wings yellowish, the veins slightly darker; male terminalia with the basal dististyle a simple, gently curved rod, narrowed to an acute blackened point, at apex with a few long setae; arms of the lyriform phallosomic structure smooth.

♂. Length about 5.2 mm.; wing 5.8 mm.

Rostrum brown, palpi black. Antennae of ♂ brown, of moderate length, if bent backward extending about to the wing-root; flagellar segments long-oval, the verticils exceeding the segments. Head light buffy-brown.

Lateral pretergites restrictedly whitish. Mesonotum light reddish-brown, without distinct markings; mediotergite restrictedly darker medially. Pleura slightly darker brown than the notum; posterior edge of pteropleurite with a group of conspicuous setae. Halteres pale, the knobs obscure yellow. Legs with the coxae yellowish testaceous; trochanters obscure yellow; remainder of legs

brownish-black; fore tibia of ♂ with a slightly enlarged, more blackish, subbasal ring. Wings broad, the ground-colour yellowish; veins slightly darker yellow; macrotrichia dark brown, the costal fringe conspicuous. Venation: R_2 lying slightly beyond r-m; petiole of cell M_3 a little less than two times m-cu; vein 2nd A elongate, extending to about opposite one-third the length of the petiole of cell M_3 .

Abdomen brown, the terminalia more yellowish. Male terminalia (Text-fig. 9) with the ventral lobe of basistyle (*vb*) relatively slender, terminating on mesal face in a small blunt lobe directed cephalad. Outer dististyle (*od*) bifid, the lateral arm stout and straight, the shorter inner or mesal arm black, gently curved, its tip obtuse. Basal dististyle (*bd*) a simple, gently curved rod, gradually narrowed to the acute blackened tip, at extreme base a little expanded but not bearing a spine, as is the case in *lyratus*; just before apex of style on inner face a few long setae; style slender, without a lateral flange, as in *sublyratus*. Phallosomic structure (*p*) lyriform, as in the subgroup; arms long and slender, entirely smooth.

Hab.—New South Wales.

Holotype, ♂, Wentworth Falls, Blue Mts., altitude 2,840 feet, 20th–30th October, 1930 (F. E. Wilson).

Molophilus neolyratus differs from *M. lyratus* Alexander (Tasmania) in the very different structure of the basal dististyle of the male terminalia, and from *M. sublyratus* Alexander (Victoria) in the smooth, untoothed arms of the phallosomic structure.

MOLOPHILUS EQUISETOSUS, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; general coloration of thorax reddish-brown, the praescutum only vaguely lined with darker; antennae of ♂ elongate, nodulose; male terminalia with the outer dististyle a simple blackened horn; basal dististyle a long slender sinuous rod, dilated on basal fourth, thence narrowed into a slender spine, at point of narrowing with a score or more of long setae that resemble to some degree a horse's tail; phallosome a blackened depressed plate that bears spines and protuberances.

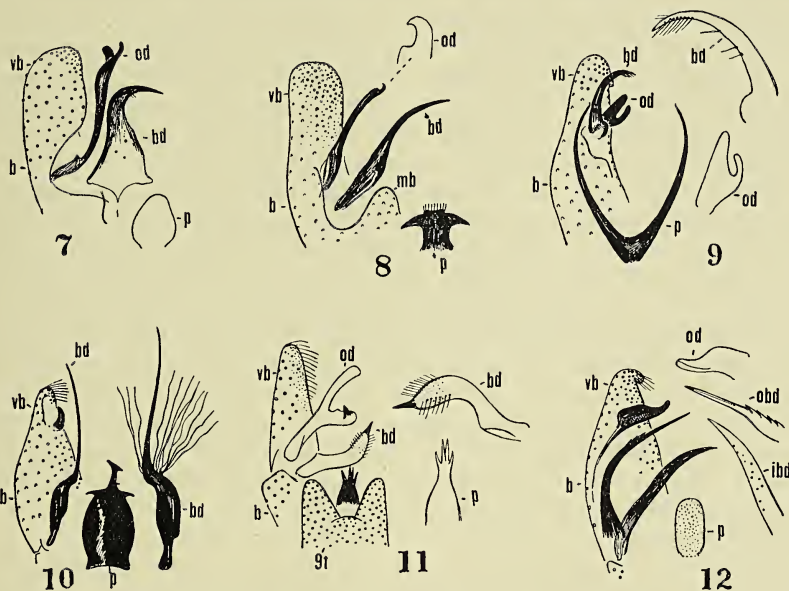
♂. Length about 5 mm.; wing 6×1.8 mm.; antenna about 4 mm. ♀. Length about 5.5 mm.; wing 6.5 mm.

Rostrum brown; palpi darker. Antennae of ♂ elongate, as shown by the measurements, dark brown throughout; flagellar segments fusiform, broadest on basal half, narrowed to tips, with conspicuous outspreading setae. Head dark brown.

Mesonotum reddish-brown, the praescutum with vague indications of a darker median vitta. Pleura reddish-brown, the dorsal region not or scarcely darker in colour. Halteres yellow basally, the knobs broken. Legs obscure yellow, the outer tarsal segments darker. Wings broad, tinged with greyish-brown; trichia abundant, dark brown; veins pale brown. Costal fringe long and conspicuous. Venation: R_2 lying beyond level of r-m; petiole of cell M_3 about twice m-cu; vein 2nd A long, extending to near one-third the length of the petiole of cell M_3 .

Abdomen dark brown. Male terminalia (Text-fig. 10) with the apex of ventral lobe (*vb*) of basistyle relatively narrow, with numerous coarse setae. Outer dististyle (*od*) a small simple blackened horn. Basal dististyle (*bd*) a long slender spine, in a position of rest extending caudad beyond the extreme level of the basistyle; basal fourth more expanded, thence suddenly sinuous and

narrowed into the very long, nearly straight, apical spine; at point of narrowing, a group (exceeding a score) of long reddish setae, somewhat suggesting a horse's tail, these setae exceeding in length one-half the length of the terminal spine. Phallosome (*p*) a blackened depressed plate, near outer end on either



Text-figs. 7-12.—Male terminalia.

7, *Molophilus dorriganus*, n. sp.; 8, *M. pictor*, n. sp.; 9, *M. neolyratus*, n. sp.; 10, *M. equisetosus*, n. sp.; 11, *M. extensicornis*, n. sp.; 12, *M. trifasciolatus*, n. sp. (Symbols: *a*, aedeagus; *b*, basistyle; *bd*, basal dististyle; *ibd*, inner basal dististyle; *mb*, mesal lobe of basistyle; *obd*, outer basal dististyle; *od*, outer dististyle; *p*, phallosome; *t*, tergite; *vb*, ventral lobe of basistyle.)

side produced laterad into an acute spine; the median area of plate extends further caudad into a straight black rod, at apex terminating in two blackened spines that lie in a straight angle to one another.

Hab.—New South Wales.

Holotype, ♂, Mount Victoria, Blue Mts., altitude 3,425 feet, 20th-30th October, 1930 (F. E. Wilson). *Allotopotype*, ♀, 13th November, 1933 (V. C. Retford). *Paratopotype*, ♂, 12th November, 1933 (V. C. Retford).

The nearest allies of this remarkable species are *Molophilus tasioceroides* Alexander and *M. wilsoni* Alexander, both of which have elongate antennae in the male sex, and with a variously modified blackened phallosome, but in all other respects are entirely different flies. The present species and *M. wilsoni* are the largest members of this particular subgroup of the genus.

MOLOPHILUS EXTENSICORNIS, n. sp.

Belongs to the *gracilis* group, *ruficollis* subgroup; allied to *wilsoni*; antennae of ♂ approximately as long as body, the flagellar segments not nodulose; wings grey, without brown suffusion; male terminalia with inner arm of outer dististyle bearing a blackened tooth before apex; basal dististyle shorter than the

outer, appearing as a strongly curved rod that terminates in an acute black spine.

♂. Length about 5 mm.; wing 6.5 mm.; antenna about 4.8 mm.

Rostrum and palpi dark brown. Antennae of ♂ elongate, approximately as long as the body, dark brown throughout; flagellar segments elongate-cylindrical, not nodulose, with long, outspreading setae. Head dark brown.

Thorax almost uniformly dark brown; setae of praescutal interspaces long and conspicuous. Halteres dusky. Legs with the coxae and trochanters testaceous; remainder of legs brown, the colour chiefly produced by dark setae. Wings tinged with grey, the veins slightly darker; macrotrichia dark brown. Venation: Petiole of cell M_2 relatively short, about twice m-cu.

Abdomen, including the terminalia, dark brown. Male terminalia (Text-fig. 11) with the ventral lobe (*vb*) of basistyle elongate, narrowed to the obtuse tip, the mesal face with long, very delicate setae. Outer dististyle (*od*) bifid, the two arms long and divergent, the outer longer, a little expanded at tip; inner arm with an erect blackened tooth before apex. Basal dististyle (*bd*) shorter than the outer, appearing as a strongly curved rod that terminates in an acute black spine; outer half of style with abundant delicate setae, especially on lateral face and surrounding the apical spine. Phallosome (*p*) black, narrowed at apex into a group of four black spines that are arranged more or less in pairs, the apical pair lying about in a line with the axis of the structure and not divergent. Ninth tergite (*9t*) large and conspicuous, as in this restricted section, profoundly emarginate, the lobes with coarse black setae.

Hab.—Victoria.

Holotype, ♂, Yarram, South Gippsland, 2nd July, 1933 (F. E. Wilson).

Molophilus extensicornis is similar in general appearance and size to *M. wilsoni* Alexander (Victoria) which may be considered as being the nearest ally. The structure of the styli of the male terminalia, especially the basal dististyle, readily distinguishes the species. The various members of this section of the subgroup have the male antennae greatly lengthened, differing from the other species of the genus in the Australian fauna by the simple cylindrical flagellar segments of the antennae, which much resemble those of the genus *Tasiocera*.

MOLOPHILUS TRIFASCIOLATUS, n. sp.

Belongs to the *pervagatus* group; mesonotum light reddish-brown, the mediotergite and dorsal pleurites blackened, the ventral sternopleurite paling to reddish-brown; halteres yellow; femora yellow, the tips narrowly but conspicuously blackened; wings cream-yellow, with three grey areas that appear as more or less complete crossbands; male terminalia with the outer dististyle a simple structure, the apex narrow and obtuse; both dististyles acute at apices.

♂. Length about 3.8–4 mm.; wing 4.6–4.8 mm.

Rostrum and palpi brownish-black. Antennae with scape yellow, the pedicel yellowish-brown; flagellum dark brown, with long verticils that much exceed the segments. Head obscure yellow, the centre of the vertex extensively brownish-grey.

Pronotum obscure yellow above, dark brown laterally. Anterior lateral pretergites light sulphur-yellow. Mesonotal praescutum and scutum light reddish or reddish-brown, the former a little darker medially, especially in front; scutellum obscure yellow, the parascutella darker; mediotergite brownish-black,

more reddish-brown laterally. Pleura brownish-black to plumbeous, the ventral sternopleurite and dorsal meral region paling to reddish-brown; ventral meron again darkened. Halteres light yellow. Legs with the coxae and trochanters yellow; femora yellow, the tips narrowly but conspicuously blackened; tibiae and basitarsi obscure yellow; terminal tarsal segments brownish-black; fore tibia with a narrow but very conspicuous jet-black subbasal ring. Wings with the ground-colour cream-yellow, trifasciate with brownish-grey, the broadest area including the wing-apex; a narrower but almost complete crossband at cord, extending from R_2 to the margin along vein Cu_1 ; the most basal band incomplete, occupying the cubital and anal fields only; veins yellow, darker in the clouded areas. Venation: R_2 and r-m in approximate transverse alignment; vein 2nd A ending about opposite the caudal end of m-cu.

Abdomen dark brown to brownish-black, the terminalia only a trifle brighter. Male terminalia (Text-fig. 12) with the outer dististyle (*od*) a simple blackened structure, the distal half narrowed to a somewhat obtuse blunt lobe, not at all bifid or trifid. Outer basal dististyle (*obd*) a long slender acute rod, near its outer end with appressed spines. Inner basal dististyle (*ibd*) a little shorter but broader, appearing as a blade of moderate width, gradually narrowed to the acute tip.

Hab.—New South Wales.

Holotype, ♂, Megalong Valley, Blue Mts., 20th–30th October, 1930 (F. E. Wilson). *Paratopotype*, ♂.

The present species is very similar in its general appearance to *Molophilus pervagatus* Skuse, differing in the larger size and quite distinct structure of the male terminalia, especially the unlobed nature of the outer dististyle. The male terminalia are most like that of *M. acutistylus* Alexander, which differs especially in the pattern of the legs, and less evidently in that of the wings.
